

## WHAT IS CLAIMED:

1. A method of extending EJB Handles for use with Enterprise JavaBeans (EJBs) to provide a SmartHandle, comprising the steps of:

maintaining an Entity EJB object relationship through a combination of a proxy pattern, an EJB Handle, and a primary key of the EJB Handle;

storing EJB Home class from which an Entity EJB was generated and from which said Entity EJB can be re-instantiated; and

maintaining an instance of a SmartKey that describes said primary key for a database column to which an Entity EJB object is mapped.

10

2. The method of claim 1, further comprising the steps of instantiating said Entity EJB object associated with said SmartHandle with a single method invocation.

15

3. The method of claim 2, wherein said single method invocation includes the steps of:

locating said EJB Home class using Java Naming and Directory Interface (JNDI);

using reflection to obtain an `ejbFindByPrimaryKey` method; and

20

invoking said `ejbFindByPrimaryKey` method with said SmartKey.

4. The method of claim 1, further comprising the steps of:  
implementing `java.util.Comparable` interface; and

25

delegating to a SmartKey class that implements a java code to perform a field-by-field comparison of attributes associated with said primary key, thereby permitting two EJB Handles to be compared without instantiating the corresponding Entity EJB Objects.

30

5. The method of claim 1, wherein said SmartKey includes said primary key of the EJB Handle, thereby providing portability to said Entity EJB object.

6. The method of claim 1, further comprising the step of assigning each attribute of said Entity EJB object and said SmartKey to a separate column within a relational database table, thereby permitting said SmartHandle to be mapped to a multi-column relational database table.

5

7. The method of claim 1, wherein said SmartHandle includes at least attributes HomeClassName, KeyClassName, and HomeName.

8. A SmartHandle for extending EJB Handles for use with Enterprise  
10 JavaBeans (EJBs), comprising:

EJB Home class from which an Entity EJB was generated and from which said Entity EJB can be re-instantiated; and

an instance of a SmartKey that describes said primary key for a database  
column to which an Entity EJB object is mapped;

15 wherein said SmartHandle maintains an Entity EJB object relationship through a combination of a proxy pattern, an EJB Handle, and a primary key of the EJB Handle;

9. The SmartHandle of claim 8, wherein said Entity EJB object associated  
20 with said SmartHandle being instantiated with a single method invocation.

10. The SmartHandle of claim 9, wherein said single method invocation is operable to locate said EJB Home class using Java Naming and Directory Interface (JNDI), use reflection to obtain an ejbFindByPrimaryKey method,  
25 and invoke said ejbFindByPrimaryKey method with said SmartKey.

11. The SmartHandle of claim 8, wherein said SmartHandle is operable to implement java.util.Comparable interface and delegate to a SmartKey class that implements a java code to perform a field-by-field comparison of attributes  
30 associated with said primary key, thereby permitting two EJB Handles to be compared without instantiating the corresponding Entity EJB Objects.

12. The SmartHandle of claim 8, wherein said SmartKey includes said primary key of the EJB Handle, thereby providing portability to said Entity EJB object.

5

13. The SmartHandle of claim 8, wherein each attribute of said Entity EJB object and said SmartKey is assigned to a separate column within a relational database table, thereby permitting said SmartHandle to be mapped to a multi-column relational database table.

10

14. The SmartHandle of claim 8, wherein said SmartHandle includes at least attributes HomeClassName, KeyClassName, and HomeName.